INVESTIGATOR'S ANNUAL REPORT

National Park Service

All or some of the information provided may be available to the public

Reporting Year: 1994	**Park:** Shenandoah NP
Principal Investigator: J. Voshell, Jr.	**Office Phone:** (703)231-5707 **Email:** n/a
Address: VPI & SU Dept of Entomology Blacksburg, Va 24061	**Office Fax:** n/a
Additional investigators or key field assistants (first name, last name, office phone, office email): No co-investigators	
Permit#: SHEN1994AJLE	
Park-assigned Study Id. #: unknown	
Project Title: Effects of Defoliation on the Aquatic Biota of Headwater Streams in Shenandoah National Park	
Permit Start Date: Jan 01, 1998	**Permit Expiration Date** Jan 01, 1998
Study Start Date: Jan 01, 1991	**Study End Date** Jan 01, 1994
Study Status: Completed	
Activity Type: Other	
Subject/Discipline: Invertebrates (Insects, Other)	
Objectives: 1. To determine the effect of defoliation on structure and function of benthic macroinvertebrate community.;2. To determine effect of defoliation on riparian vegetaion corridor and aquatic vegetation (SNP LTEMS Monitoring).	
Findings and Status: Impacted streams had elevated water temperatures for a brief period corresponding to gypsy moth defoliation (late-spring, early-summer). The annual input of coarse detritus (primarily leaves) was significantly less in the impacted streams, and there was a distinct pulse of this material during late-spring, early-summer. The annual input of frass (insect feces) was significantly higher in the impacted streams. There was no clear trend for any significant change in water chemistry in the impacted streams. Several measures of community structure (taxa richness, Hilsenhoff's biotic index, EPT index, diversity index, percent contribution of functional feeding groups, and Bray-Curtis similarity coefficient) indicated that there was no significant difference between the benthic macroinvertebrate community in the impacted and reference streams. There were only very slight changes in growth or production that could be attributed to defoliation. We concluded that the short-term effects of riparian defoliation by gypsy moth larvae were minor. We arrived at this conclusion by comparing a variety of structural and functional measures commonly used to detect environmental perturbations and finding almost all of them to be statistically not significant.	
For this study, were one or more specimens collected and removed from the park but not destroyed during analyses? No	
Funding provided this reporting year by NPS: 9900	**Funding provided this reporting year by other sources:** 0
Fill out the following ONLY IF the National Park Service supported this project in this reporting year by providing money to a university or college	
Full name of college or university:	**Annual funding provided by NPS to university or college this reporting**

n/a	**year:** 0